

Toxicity assessment of oil-contaminated sediments on ostracods (*Heterocypris incongruens*) in laboratory bioassays and in field mesocosm experiment

Stepanova N., Nikitin O., Latypova V.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016, International Journal of Pharmacy and Technology. All rights reserved. The present study demonstrates toxicity assessment of model sediments, spiked by crude oil in different concentrations, by examining the native macroinvertebrate taxa that colonized sediments in field-based mesocosm condition and in laboratory bioassays. The results of two months exposure in natural river (Kazanka river, Republic of Tatarstan, Russia) showed that density of benthos community especially Insecta taxa were decreasing in vessels with total hydrocarbons content at the level of 210 mg kg⁻¹. High level correlations were showed between total number, biomass of Oligochaeta taxa and total hydrocarbons content. Toxicity assessment with ostracods (*Heterocypris incongruens*) revealed survival decreasing since concentration of total hydrocarbons content at the level of 250 mg kg⁻¹. Therefore, total hydrocarbons content in sediments in concentration of 250-300 mg kg⁻¹ can cause toxic effect that can lead to degradation of the most sensitive taxa of benthic community.

Keywords

Bioassay, Crude oil, *Heterocypris incongruens*, Mesocosm, Sediments, Toxicity assessment